MULTIMEDIA UNIVERSITY

STUDENT ID NO

MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 2, 2016/2017

TQA7011 – SOFTWARE QUALITY ASSURANCE AND TESTING

(All sections / Groups)

8th FEBRUARY 2017
8.00pm-10.00pm
(2 Hours)

INSTRUCTIONS TO STUDENTS

1. This Question paper consists of 4 pages (including cover page) with 4 Questions only.
2. Attempt **ALL** questions. All questions carry equal marks and the distribution of the marks for each question is given.
3. Please print all your answers in the Answer Booklet provided.

Question 1

(a) Will following high-quality software development processes always lead to high quality products? If not, why not? (2 marks)

(b) What is the difference between quality assurance and defect prevention? (2 marks)

(c) Flexibility is one of the software quality factors which are included in the product revision category. Describe this quality factor in details with an example. (3 marks)

(d) Suggest THREE generic test conditions of a Text Box. (3 marks)

Question 2

(a) Suggest TWO test types which will be most important for a software control system that will be integrated into a wider system and is expected to generate several variants and undergo a number of environment changes over a period of 5 years. (2 marks)

(b) What is boundary value analysis as used for selection of test data? (2 marks)

(c) Explain the difference between correction, corrective action and preventive actions. (3 marks)

(d) One of the fields on a form contains a text box, which accepts alphabets in lower or upper case. Identify THREE invalid Equivalence class value. (3 marks)

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Question 3

(a) Analyze the following program:

```
Ask: "What type of ticket do you require, single or return?"
IF the customer wants 'return'
Ask: "What rate, Standard or SeniorDiscount?"
IF the customer replies 'SeniorDiscount'
Say: "That will be RM12.20"
ELSE
Say: "That will be RM17.50"
ENDIF
ELSE
Say: "That will be RM9.10"
ENDIF
```

Design at least THREE test cases with different input values to ensure that all the questions have been asked, all combinations have occurred and all replies given. (3 marks)

(b) Given the following program, calculate the McCabe's Cyclomatic Complexity. (1 mark)

```
IF X <>= Z
THEN Statement 2;
END
```

(c) Assume that you are involved in testing an application. This application is an online dating service that allows users: to enter a profile of themselves; to meet orientation-appropriate people who would be a good match for them; to arrange social events with those people; and, to block people they don't want to contact them. Defects and test cases are managed in an existing commercial test management tool, which is working well. Source code and other project work products are stored in an open source configuration management system. Your manager directs you to help her select a test execution automation tool to automate most of the regression testing. *Consider this scenario: Assume you are using a keyword-driven automation approach.*

Continued...

From the following options, select **THREE MOST LIKELY** keywords for this application. Justify your selection and explain why other options are being rejected. (6 marks)

A. Enter_Profile
B. Block_Person
C. Find_Match
D. Delete_Profile
E. Enter_Test_Data
F. Remove_Test_Data
G. Pay_Bill
H. Exclude_Non_Smokers

Question 4

(a) List THREE potential advantages of adding tools to the test process. (3 marks)

(b) If a defect is detected during internal testing on code that has already been released and the defect is severe enough that an external fix will need to be issued, should the cost of fixing the error be recorded as an internal failure (it was detected during internal testing) or external failure (it will have to be fixed externally)? (2 marks)

(c) Monitoring tools are used to keep track of the status of the system in use, in order to have the earliest warning of problems and to improve service. There are monitoring tools for servers, networks, databases, website and internet usage and applications. Identify FOUR features of monitoring tools. (2 marks)

(d) (i) How does a client/server environment affect testing? (1.5 marks)

(ii) What should be the focus if there is limited time for testing under a client/server environment? (1.5 marks)

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